

## Remarks

### Advisory Action

The Advisory Action indicated that the amendment filed on November 14, 2003, was not entered because:

- Claim 113 depended on cancelled claim 9 (sic, 109); and
- Claims 115 and 144 did not further limit their depending claims (sic, their independent claims).

Each of these issues is addressed in this submission.

First, claim 113 and claim 114, which depended from claim 109, have been cancelled to expedite prosecution. Second, claims 115 and 144 have not been changed. In fact, each of these claims does further limit the claim or claims from which it depends. The independent claims recite that the molecular beacon probes **comprise** certain numbers of nucleotide bases in each of the stem and loop portions. The dependent claims each recite that the molecular beacon probes **consist** of certain numbers of nucleotide bases in each of the stem and loop portions. Claims which recite “consist” are narrower than claims which recite “comprise.” Therefore, claims 115 and 144 further limit the claims from which they depend. The following table details the relationships of the claims and their recitations.

DEPENDENT CLAIM NO.	RECITATION OF DEPENDENT CLAIM	INDEPENDENT CLAIM NO.	RECITATION OF INDEPENDENT CLAIM
115	wherein the loop <b>consists</b> of 16 base pairs and has a T <sub>m</sub> of 50-51°C, and wherein the stem <b>consists</b> of 4 base pairs	65	wherein the stem <b>comprises</b> about 4 base pairs having a sequence 5'-CACG-3', and the loop <b>comprises</b> about 16 base pairs
115	wherein the loop <b>consists</b> of 16 base pairs and has a T <sub>m</sub> of 50-51°C, and wherein the stem <b>consists</b> of 4 base pairs	66	wherein the stem <b>comprises</b> about 4 base pairs having a sequence 5'-CACG-3', and the loop <b>comprises</b> about 16 base pairs

DEPENDENT CLAIM NO.	RECITATION OF DEPENDENT CLAIM	INDEPENDENT CLAIM NO.	RECITATION OF INDEPENDENT CLAIM
115	wherein the loop <b>consists</b> of 16 base pairs and has a $T_m$ of 50-51°C, and wherein the stem <b>consists</b> of 4 base pairs	67	wherein the stem <b>comprises</b> about 4 base pairs having a sequence 5'-CACG-3', and the loop <b>comprises</b> about 16 base pairs
144	wherein the loop of the first molecular beacon probe <b>consists</b> of 16 base pairs and has a $T_m$ of 50-51°C, and wherein the stem of the first molecular beacon probe <b>consists</b> of 4 base pairs	143	wherein the loop <b>comprises</b> about 16 base pairs and has a $T_m$ of about 50-51°C, and wherein the stem <b>comprises</b> about 4 base pairs
144	wherein the loop of the first molecular beacon probe <b>consists</b> of 16 base pairs and has a $T_m$ of 50-51°C, and wherein the stem of the first molecular beacon probe <b>consists</b> of 4 base pairs	110	wherein the stem <b>comprises</b> about 4 base pairs having a sequence 5'-CACG-3', and the loop <b>comprises</b> about 19-20 base pairs
144	wherein the loop of the first molecular beacon probe <b>consists</b> of 16 base pairs and has a $T_m$ of 50-51°C, and wherein the stem of the first molecular beacon probe <b>consists</b> of 4 base pairs	111	wherein the stem <b>comprises</b> about 4 base pairs having a sequence 5'-CACG-3', and the loop <b>comprises</b> about 19-20 base pairs
144	wherein the loop of the first molecular beacon probe <b>consists</b> of 16 base pairs and has a $T_m$ of 50-51°C, and wherein the stem of the first molecular beacon probe <b>consists</b> of 4 base pairs	112	wherein the stem <b>comprises</b> about 4 base pairs having a sequence 5'-CACG-3', and the loop <b>comprises</b> about 19-20 base pairs

### The Amendments

### Claims

Claims 65, 66, and 67 have been amended to recite that the first molecular beacon probe “comprises a stem and a loop, wherein the stem comprises about 4 base pairs having a sequence 5’-CACG-3’, and the loop comprises about 16 base pairs” in place of “comprises a first stem which comprises about 4 base pairs having a sequence 5’-CACG-3’, and a first loop structure which comprises about 16 base pairs.” Claims 110, 111, and 112 have similarly been amended to recite that the second molecular beacon probe “comprises a stem and a loop, wherein the stem comprises about 4 base pairs having a sequence 5’-CACG-3’, and the loop comprises about 19-20 base pairs” in place of “comprises a second stem which comprises about 4 base pairs having a sequence 5’-CACG-3’, and a second loop structure which comprises about 19-20 base pairs” (claim 110) or “comprises a second stem comprising about 4 base pairs having a sequence 5’-CACG-3’, and a second loop structure comprising about 19-20 base pairs” (claims 111 and 112). These amendments merely clarify the recited characteristics of the first and second molecular beacon probes and do not change the scope of the claims. Claims 98 (renumbered as claim 143), 99 (renumbered as claim 144), 100, 101, 115, and 116 depend from some or all of claims 65-67 and 110-112 and have been similarly amended.

The claims have been renumbered as follows:

Old claim number	New claim number		Old claim number	New claim number		Old claim number	New claim number
68	117		82	128		94	139
70	118		83	129		95	140
71	119		84	130		96	141
74	120		85	131		97	142
75	121		86	132		98	143
76	122		87	133		99	144
77	123		88	134		102	145
78	124		89	135		72	146
79	125		91	136		73	147
80	126		92	137		103	148
81	127		93	138		109	149

#### Specification

The specification has been amended to enter a substitute sequence listing.

The amendments merely clarify the claims and specification. Thus, the amendments introduce no new matter and do not require further search or consideration. The amendments were not made earlier because they respond to new grounds of rejection and objection raised in the currently pending final Office Action. No new claims have been introduced, they are only renumbered. The amendments are believed to place the claims in condition for allowance.

#### Sequence Compliance

The Office Action indicates that the specification is objected for not complying with the requirements of 37 C.F.R. §§ 1.821-1.825. Specifically, the computer readable form copy of the sequence listing is objected to for containing sequences which do not contain the variable “n,” but for which a definition of “n” is provided.

A paper and computer readable form of a substitute sequence listing were submitted on November 14, 2003 which removes the definition of the variable “n” from sequences that do not contain an “n.” The CRF was entered into the PTO database on November 24, 2003. I believe that the paper and computer readable form of the sequence listing are identical in content. The substitute sequence listing introduces no new matter.

Withdrawal of this objection is respectfully requested.

#### The Objection to Claims 68-109

Claims 68-109 have been objected as not limiting the subject matter of a previous claim.

Claims 69, 90, 104-108 are canceled. Claims 100 and 101 recite dependency on only previous claims. Thus neither of these claims should be included in the objection.

Although not required according to M.P.E.P. § 608.01(n)(I)(F), after consultation with Examiner Siew, applicants have renumbered claims 68, 70-89, 91-99, 102, 103, and 109 as claims 117-149.

Applicants respectfully request withdrawal of this objection.

#### The Rejection of Claims 65-68, 70-103, and 109-116 Under 35 U.S.C. § 112, Second Paragraph

Claims 65-68, 70-103, and 109-116 are rejected under 35 U.S.C. § 112, second paragraph as being indefinite. Applicants respectfully traverse.

The Office Action asserts that the rejected claims are indefinite because it is unclear whether the recitations of “first loop” or “second loop” in independent claims 65-67 and 110-112 refer to a plurality of loops present within each probe. Claims 65-67 and 110-112

have been amended to recite “loop” in place of either “first loop” or “second loop” to correct the alleged defect.

Applicants respectfully request withdrawal of this rejection.

Respectfully submitted,

Dated: January 8, 2004

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